Star Babies: Evaluation of a health visiting initiative for first-time parents in Northern Ireland

Title: Star Babies Project – An evaluation of a health visiting initiative for first time parents

Abstract (232 words)

Background: Star Babies is an enhancement of the universal Child Health Promotion Programme, whereby first-time parents in a Health and Social Care Trust (HSCT) in Northern Ireland are offered additional regular health visiting support from the antenatal period until baby is twelve months of age. The present study was carried out to evaluate outcomes of first-time parents who received the core Child Health Programme or the enhanced Star Babies programme within the HSCT, in order to identify the areas where the programmes are successful and to quantitatively assess the magnitude of their impact. **Methods:** First time parents were invited to participate in the study. Participants were divided into two groups; those that availed of Star Babies (n = 189), and those that availed of the core Child Health Promotion Programme (n = 125). This was a quantitative study that used a self-completion paper or an online questionnaire with data collected during 2019. **Results:** The study found differences between the two groupings of first-time parents and the evaluation of the health visiting services that they received. Differences were found in terms of infant feeding, knowledge of preventing home accidents, approaches of support/overall satisfaction varied across the two groups. **Discussion:** The findings of the present study have highlighted the benefits and positive outcomes that arise from an enhanced health-visitor led programme such as Star Babies and has implications for policy, practice and service development.

Keywords: health visiting, parenting, child health, infant feeding, parental satisfaction, home safety, community engagement

What is already known about the topic?

- The first two years of life are crucial in determining the child's future life course, health and health inequalities.

- Universal health visiting services are focused on the components of home visiting, needs assessment, and parent– health visitor relationships.
- There is limited research about the outcomes of enhanced health visitor-led programmes.

What this paper adds?

- An enhanced health visitor-led programme can significantly increase breastfeeding initiation and duration among first time parents.
- First time parents who participated in an enhanced as compared to a universal health visitor-led programme had greater awareness of and were more likely to engage with community and support groups.
- The parent-health visitor relationship developed within the context of an enhanced programme contributed to parents' perceptions of feeling valued and respected.

(Main Body 4029 words)

Introduction

Recent decades have seen a rapid increase in scientific understanding about how children develop both before birth and in the first three years of life, and the significance of this early period for public health and health inequalities. This new knowledge includes developmental neurophysiology, the interplay of genetic inheritance and environment (Shonkoff and Phillips 2000; Centre on the Developing Child at Harvard University 2010; Cowley et al. 2015; Miguel et al. 2019) and evidence confirming the crucial influence that pregnancy and the early years have on establishing the child's future life course. This is a critical period for assembling the neurophysiological, psychological and behavioural aspects of development that lead to health inequalities (Irwin et al. 2007; Shonkoff et al. 2009; The 1001 Critical Days Manifesto 2015; Marmot et al. 2020). In turn, this knowledge has laid the foundation for a parallel increase in understanding about those health promotion and preventive interventions that are most likely to help, and where the strongest evidence lies (Shonkoff 2014). It is recognised how early years intervention before the age of two years is key to transforming social, health and economic outcomes for the better (The 1001 Critical Days Manifesto 2015). Minimising risk factors related to social and emotional development is particularly relevant during the antenatal and postnatal period and in the first year of life when the majority of women are in regular contact with services (National Institute for Health and Care Excellence 2014; The 1001 Critical Days Manifesto 2015).

There are questions about how health visitors in the UK practice in the current service, and about what makes the role effective, particularly in terms of how and in what ways families might benefit in terms of outcomes. The nature of the health visitor-client relationship needs to be clarified, along with evidence for any therapeutic aspects of this or other aspects of the work of health visitors. This includes identifying the different elements of the health visitor-client relationship to examine the nature and extent of the evidence base about the impact of these on child and family life. A clearer understanding of health visiting skills, particularly in respect of relational skills/relationship forming, needs assessment and professional judgement, would help to identify the relevance and importance of these, and how the different forms of practice influence the experiences of health visiting service

users. Analysis of the literature (Cowley et al. 2013; Cowley et al. 2015) revealed that health visiting practice is characterised by a particular approach known as 'orientation to practice'. This embodies the values, skills and attitudes needed to deliver health visiting services through salutogenesis (health creation), person-centredness (human valuing) and viewing the person in situation (human ecology). According to previous research, health visiting actions are focused on three core components of practice: home visiting; needs assessment; and parent– health visitor relationships (Cowley et al. 2013; Cowley et al. 2015). Previous research has shown that positive parent-health visitor relationships are essential for positive outcomes for families. Parent-health visitor relationships are mentioned repeatedly in previous studies as a mechanism which is seen as important in enabling uptake by families who sometimes find services hard to access (Cowley et al. 2013; Bidmead et al. 2015; Cowley et al. 2015; Bidmead et al. 2016a; Bidmead et al. 2016b). A series of studies have highlighted the importance of the qualities and skills not only of the health visitor but also of the parent (Bidmead et al. 2015; Bidmead et al. 2016a; Bidmead et al. 2016b). It appears self-evident that the quality of the health visitor working relationship is dependent on both parties with the ideal relationship developing as a partnership between parents and health visitors (Bidmead et al. 2015). Previous research has also pointed to health visiting outside the home including the practice that occurs in children's centres, well baby clinics, and the delivery of support groups, as being considered very important by parents (Donetto et al, 2015; Donetto and Maben 2015).

In the UK, health visitors are the professional group charged with supporting early child development, by delivering a universal service designed to promote the healthy development of pre-school children, whilst improving public health and reducing health inequalities. Within Northern Ireland, Healthy Child, Healthy Future: Universal Child Health Promotion Programme for Northern Ireland (Department of Health, Social Services and Public Safety 2010) is 'a public health programme that offers every family with children a programme of screening, immunisations, developmental reviews, and information and guidance to support parenting and healthy choices so that children and families achieve their optimum health and wellbeing'. This universal programme, delivered by health visiting services, prescribes the number and purpose of specific contacts (such as antenatal or new birth contacts and

immunization schedules), and emphasises the need for integration with other services for children, families, mental health and public health. Star Babies is aligned to public health priorities which include lifestyle behaviours, managing childhood illness, childhood injury prevention, breastfeeding and infant feeding, physical activity, and healthy emotional and social development.

Purpose of the Present Study

Star Babies has been designed as an enhancement of the universal Child Health Promotion Programme, whereby first-time parents in the HSCT are offered additional visits as part of the core health visiting service. Star Babies offers first time parents regular support from the antenatal period until baby is twelve months of age. The importance of parenting and emotional attachment is central to Star Babies as underpinned by the key themes of emotional and social development, communication, cognitive and physical development. It is delivered with the aim of improving infant mental health outcomes, with additional focus on the influence of early relationships and early experience on baby brain development. While the aims of the core Child Health Promotion Programme and Star Babies may be regarded as commendable, the aim of this study was to evaluate the impact of both health visitor-led programmes, in order to identify the areas where the programmes are successful and to quantitatively assess the magnitude of their impact.

Aim and Objectives

The primary aim of this evaluation was to compare the outcomes of first-time parents who received two health visitor-led programmes namely; Star Babies and core Child Health Promotion Programme within the HSCT. Outcomes compared in this evaluation were infant feeding, parenting confidence, knowledge of child accident prevention, community engagement, and relationship with health visiting team.

Methods

Recruitment and selection

As Star Babies is already being offered in five health visiting team localities in the HSCT, and involved a change in working practices of all health visitors within these localities, it was not possible for Star Babies to be compared to the core Child Health Promotion Programme in the same location. Two comparison health visiting team localities who offer the core Child Health Promotion Programme only, whose overall social, economic, and demographic profiles most closely matched those of Star Babies localities and which contained approximately the same sized population of twelve months old children, were adopted as comparison localities. The Star Babies and core Child Health Promotion Programme localities both reflected a drop in birth rate by 10% over the previous ten years; infant mortality rate of 4.3 per 1,000 live births; 2.8% of new mothers under 20 years; breastfeeding rate at discharge of 47.6%; 4.3 per 1,000 population of children aged 0-17 years on Child Protection Register; 25% of children living in absolute low income poverty before housing costs; 7.5% of children being dependents of claimants of income support and 24.4% of primary school children availing of free school meals (Children and Young People's Strategic Partnership 2020). First time parents within the HSCT were advised of the evaluation by their family health visitor during a routine visit around the time of their child's first birthday. The health visitor provided the parents with the Participant Information Sheet and the Study Questionnaire. Completed questionnaires were returned by parents to the researcher (BR) in the stamped addressed envelope provided. Parents' verbal consent was also sought to forward their mobile telephone number to the researcher. Locality health visiting teams collated on a monthly basis a list of the mobile telephone numbers of first-time parents whose child has reached twelve months of age during the preceding month. These monthly lists of mobile telephone numbers were forwarded by encrypted email to the researcher who then sent parents a SMS text encouraging participation in the study and containing a link to the study questionnaire. Parents were advised to complete either the paper or online questionnaire, but not both.

Participants

First time parents from across the HSCT took part in the study. A convenience sample of 676 first time parents were invited to participate in the evaluation, reflecting the approximate/average number of births to this group of parents within the HSCT over a 12-month period. Participants were divided into two different groups: those that participated in Star Babies (n = 189), and those that took part in the core Child Health Promotion Programme (n = 125).

Data Collection

Data was collected using a self-completion paper OR online questionnaire from January until December 2019. The questionnaire was designed following a review of the literature in conjunction with consultation with first time parents and health visitors. The questionnaire contained a range of questions including demographic, multiple choice and Likert scales. The online questionnaire was delivered using Qualtrics software. Ethical approval for the study was obtained from the University Research Governance Filter Committee and the Research Ethics Service Committee.

Data Analysis

The collected data was transferred from the online questionnaire tool to Statistical Package for Social Science (Version 25) which was used for data analysis. Data were explained using descriptive statistics. Crosstabulation tables displayed the distribution of variables simultaneously (Tables 1, 2, 3, 4). Similarities and differences between the Star Babies Group and core Child Health Promotion Programme/Non-Star Babies Group were further assessed using Pearson Chi-Square and One-way Analysis of Variance (ANOVA). The Pearson Chi-square test was used to determine if the results of crosstabulations were statistically significant. The larger the Chi-square value χ^2, the greater the probability that there really was a significant difference. ANOVA was used to analyse the impact of participation in Star Babies versus Non-Star Babies on parents' overall knowledge of accident

prevention. Statistical significance for both Pearson Chi-square and ANOVA was considered to correspond to a P value <0.05.

Results

A total of 676 parents were invited to participate in the study with 314 (46.4%) completing the questionnaire. The paper questionnaire was completed by 129 (41.1%) participants with 185 (58.9%) participants completing the online version. Participants were grouped into two categories – Star Babies Group (n = 189, 60%) and Non-Star Babies Group (n = 125, 40%) (Table 1).

Infant Feeding

In terms of breastfeeding Pearson chi-square analysis revealed that a higher proportion of participants in the Star Babies Group were more likely to breastfeed in comparison to those in the Non- Star Babies Group (70% vs. 31%) χ^2 9.91 (1,1), P = .00, P<.01. In addition, in both groups' participants over the age of 30 (60% vs 35%) were also more likely to breastfeed that those under 30 years of age χ^2 19.36 (1,1), P = .00, P<.01.

Furthermore, it was found that a higher proportion of participants in the Star Babies Group regardless of education and social class showed a greater continuity of breastfeeding and continued breastfeeding after 6 months (27% vs 17%) χ^2 4.01 (1,1), P = .04, P<.05. In both the Star Babies and Non-Star Babies groups, participants in both over the age of 30 (30% vs 12%) were more likely to continue breastfeeding after 6 months in comparison to those under the age of 30 χ^2 15.09 (1,1), P = .00, P<.01.

Overall, participants in the Star Babies Group reported receiving more support from a number of sources to continue breastfeeding as compared to the Non-Star Babies Group; family members (31% vs. 18%); midwife (28% vs. 18%); health visiting team (31% vs. 21%) although these were not significant. The Star Babies Group however received a significantly greater amount of support from their partner (44% vs 26%), χ^2 13.92 (4,4) P=.01 P<.05.

Pearson chi-square analysis revealed a significant difference between groups in terms of the age that they started to wean their baby onto solids with a higher proportion Star Babies Group weaning at 6

months (38% vs 18%) χ^2 12.17 (4,4) P=.03 P<.05. The Non-Star Babies Group were more likely to wean their baby at 4 and 5 months of age.

Parenting Confidence

Differences were found between groups with respect to perceptions of confidence in parenting (although the difference were not significant). Parents in the Star Babies Group perceived themselves to have greater confidence than participants in the Non-Star Babies Group in the following areas of parenting; infant-parent relationship, infant feeding practices, and oral healthcare (Table 2).

Home safety

A significantly higher proportion of participants in the Star Babies Group took part in the home safety check in comparison to the Non- Star Babies Group (92% vs. 82%) χ^2 (2,1) 9.52, p=.04, p< .05 Analysis of variance showed that overall the Star Babies Group were more knowledgeable on how to prevent home accidents F(1,308) = 4.82. P=.03, P<.05. A significantly higher proportion of those in the Star Babies Group were more knowledgeable in regards to falls F(1,308) = 4.73 P=.03, P<.05, strangulation F(1,308) = 7.17 P=.01, P<.05, and poisons F(1,308) = 3.92 P=.01, P<.05 (See Table 3).

Community engagement

A significance difference was found between Star Babies and Non-Star Babies groups with respect to their level of awareness of local community and support groups, with participants in the Star Babies Group demonstrating greater awareness (41% vs 25%) - χ^2 16.09 (4,1), P =.003; P<.01. In addition, participants in the Star Babies Group showed greater engagement with community and support groups in comparison to those in the Non-Star Babies Group (67% vs. 46%) - χ^2 13.40 (1,1), P = .000, P<.01. Furthermore, participants over the age of 30 (65%% vs 35%) showed greater community engagement and were more likely to join groups in comparison to those under the age of 30 χ^2 8.69 (1,1), P = .00, P<.01.

Relationship with health visiting team

A significantly higher proportion of participants in the Non-Star Babies Group felt that they had received inadequate number of visits from the health visiting team in comparison to participants in the Star Babies Group, (20% vs. 6%) (χ^2 23.61 (3,1) p=.000, p<.01). In addition, a significantly higher proportion of participants in the Non-Star Babies Group felt that they did not receive an adequate service and felt that they were not understood by the health visiting team. Decisions that they made for their baby were not encouraged by members of the health visiting team (11% vs. 28%) (X^2 15.74 (1,1) p=.000, p<.01) and members of the health visiting team had forgotten details of their situation from the last meeting (9% vs. 17%) (X^2 5.12 (1,1) p=.024, p<.05). They were also more likely to indicate that members of the health visiting team failed to do what they said they would (3% vs, 11%) (X^2 8.46 (1,1) p=.004, p<.01).and gave them information/advice that was not relevant to their situation (0% vs, 23%) (X^2 15.14 (1,1) p=.000, p<.01) (Table 4).

Overall, the experience of the Star Babies Group was positive, and they indicated a more positive relationship with the health visiting team in terms of the overall support given to them. In addition, they felt that they had adequate visits and could make contact easily with a member of health visiting team if they had additional queries (93% vs. 81%) (X^2 9.68 (1,1) p=.002, p<.01) (Table 4).

Discussion

The findings of the study have highlighted that, through an enhanced universal home visiting service such as Star Babies, significant positive outcomes are achievable for first time parents. Promoting best practice in infant feeding and, in particular, supporting breastfeeding has become a public health priority for the UK government Department of Health and Department for Children Schools and Families (2009), and has long been recognised as a core component of health visiting practice. However, the UK has one of the lowest breastfeeding rates in Europe (The Lancet 2016). The issue does not appear to be lack of initiation (McAndrew et al. 2012) with approximately two-thirds of mothers starting to breastfeed (Public Health England 2020), but rather the lack of continuation of breastfeeding with 48.0% of mothers breastfeeding at 6-8 weeks in England (Public Health England

2021), 43.9% in Scotland (Information Services Division Scotland 2020), 39% in Wales (Welsh Government 2020) and 29.8% in Northern Ireland (Public Health Agency 2020). Skilled support for breastfeeding women has been shown to increase breastfeeding duration (Spencer et al. 2010). Health visitors in particular are thought to be well positioned to support mothers with breastfeeding because of their continued and active engagement with mothers after childbirth (Cairney et al. 2006; Cowley et al. 2013; Cowley et al. 2015). Contrary to an evaluation of the Nurse-Family Partnership (NFP) programme in England that reported slightly shorter duration of breastfeeding in the FNP group as compared to usual care group (7 vs 14 days) (Robling et al. 2015), the present study found that a greater proportion of participants in the Star Babies Group were more likely to breastfeed and continue breastfeeding after six months. Within the scope of emotional support, improving women's confidence around breastfeeding appears to be key. Health visitors' understanding of the contextual influences on family health is crucial and that one solution does not 'fit all' and is important for health professionals to gather knowledge on parents' contextual circumstances so that that can provide tailored infant feeding support.

Unintentional injury, often occurring in the home, is recognised as a major cause of preventable death and disability among children under five years (Public Health England 2018). This suggests that it is important to identify ways to reduce levels of injury in children, especially in the home environment (Cooper et al. 2016). The literature presents the case that health professionals are well positioned to play an important role in injury prevention, through home safety counselling, to safety equipment provision (Public Health England 2018). Because of their work with families, health visitors appear to be particularly well placed to work on injury prevention in the home (Public Health England 2016) and have previously been reported to demonstrate a positive attitude to and an interest in injury prevention activities (Watson et al. 2007). Findings from the present study showed that parents in the Star Babies Group were more likely to have taken part in the home safety check and were more knowledgeable on how to prevent home accidents in comparison to the parents in the Non-Star Babies Group. Robling et al. (2015) similarity reported that parents in the FNP group were more likely to have safety features installed within their home when their baby was one year old (21.5% vs 17%) but

that the difference between groups was not statistically significant. Interestingly, a greater proportion of babies the FNP group had attended an Emergency Department with an injury or ingestion at six months of age as compared to the usual care group (4.1% vs 2,8%) (Robling et al. 2015). However, further research is required to determine if Star Babies impacts on GP and Emergency Department attendance, morbidity and mortality arising from childhood home accidents.

Findings also point to differences between the Star Babies and Non-Star Babies groups in terms of interactions at a community level, with the Star Babies Group showing more engagement with community groups in comparison to the Non-Star Babies Group. The findings show how building capacity and using that capacity to improve health outcomes is of great importance. Health visitors play a lead role in improving health outcomes by applying the principles that guide health visiting through the whole service spectrum (Department of Health and Social Care 2011). Findings from previous studies (Hawker 2010; Whittaker and Robinson 2011; Whittaker et al. 2011) suggest that, by working more closely with other agencies (especially Sure Start Children's Centres) through either referring to (Hutchings et al. 2007; Byrne et al. 2010) or co-facilitating parent education/support programmes (Grant 2005; Cox 2008; Monica and du Plessis 2011; Roberts 2012), health visitors can play a greater part in the community and support more positive service experiences for clients (Appleton and Cowley 2008a). Health visitors should draw on their local and professional knowledge to provide information, making links with local resources and the client's existing community networks when seeking to raise awareness and facilitate health enhancing activities (McIntosh and Shute 2007; Bryans et al. 2009).

This study highlighted the centrality of the parent-health visitor relationship in optimising not only parents' accessibility to the enhanced Star Babies programme service but also their perceptions of feeling valued and respected in their parenting role. Such findings echo those of previous research that points to repeated contacts as being important for health visitors to develop a true understanding of the client situation (McIntosh and Shute 2007; Appleton and Cowley 2008b; Pettit 2008; Wilson et al. 2008; Bidmead et al. 2015, Bidmead et al. 2016a; Bidmead et al. 2016b). Sensitive

communication used within visits, allows the health visitor to *attune* to the client's situation and be *ready to shift the* focus of the visit to match pressing needs (Cowley et al. 2015). Use of listening, observing and talking skills helps the client engage with the service and makes it possible to *open up* the discussion to expose issues that may be troubling the client (Bryans et al. 2009; Bidmead et al. 2015; Cowley et al. 2015; Bidmead et al. 2016a; Bidmead et al. 2016b).

Strengths and limitations

The strength of this study lies in providing a valuable understanding of the outcomes of Star Babies as a health visitor-led initiative and of the complexities within health visiting practice. However, much larger scale evaluations of Star Babies and other enhanced universal home visiting services are required to robustly link outcomes to the activities offered by the programmes. Such evaluations might further inform policy, practice and service development. The response rate was relatively low (n=314, 46.4%) and the reasons for non-participation merit further examination. There was also the potential for recall bias with parents potentially find it difficult to remember or accurately retrieve experiences relating to, for example, breastfeeding and weaning, that happened in the past twelve months. To minimize recall bias, a well-structured questionnaire was used; parents were provided with ample time to reflect upon and think through their experiences before submitting the questionnaire; and the questionnaire was applied at the same time for both Star Babies and Non-star Babies Groups.

Conclusion

In concluding, the present study revealed differences between two groupings of first-time parents and the evaluation of the health visiting services that they received. For example, the impact of the relationship with the health visiting team was found to have significant positive outcomes for those in the Star Babies Group. Furthermore, differences in terms of feeding method used, knowledge of preventing home accidents, awareness of community groups and community engagement, and approaches of support/overall satisfaction varied across the two groups. The findings of the present study have highlighted the benefits and positive outcomes that arise from an enhanced health-visitor

led programme such as Star Babies and has implications for policy, practice and service development. There is a clear gap in Northern Ireland for an enhanced universal home visiting service for all first-time parents within the five HSCT areas, which offers repeated contact and intensive home visiting from the antenatal period until the baby is 12 months of age. The findings from the current study highlight the need for specific elements to be present in home visiting services for all first-time parents, the main focus should be on prevention and early intervention to promote infant mental health, increase parental understanding of baby brain development and the importance of early experience on health outcomes, promote the development of secure attachment relationships, maternal responsiveness, parenting confidence, knowledge and skills.

Key Points

- Enhanced health visitor-led universal home visiting services can impact positively on outcomes for first time parents
- Parent-health visitor relationship is key in optimising positive outcomes for first time parents
- Large scale evaluations of enhanced universal home visiting services are required to further inform policy, practice and service development.

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